

REMARKS

Applicant respectfully requests reconsideration. The specification has been amended to include a list of sources of external energy, such as an electric, magnetic, optical, acoustic, electromagnetic, or mechanical fields, that may be used in the present invention. Support for the amended text is provided, at least, by original claim 36 as filed with the present application, and claim 54 as filed in U.S. patent application serial no. 09/935,060, filed 08/21/01, which is incorporated by reference into the present application and to which the present application claims priority under 35 U.S.C. §120.

Claims 1-35 and 37-47 were previously pending in this application. Claims 1-35 and 37-47 remain pending with claims 1, 2, 31, and 35 being independent. No new matter has been added.

Rejection of Claims 1-34 under 35 U.S.C. 102(b) or 35 U.S.C. 103(a)

Claims 1-34 were rejected under 35 U.S.C. §102(b) as being anticipated by, or, alternatively, under 35 U.S.C. §103(a) *Tetrahedron Letters* **2000**, Vol. 41(41) ("the 2000 Yang reference") and *J. Am. Chem. Soc.* **1998**, Vol. 120(46) ("the 1998 Yang reference") (collectively, "the Yang references"); or, *J. Chem. Soc., Chem. Commun.* **1990** and *Liquid Crystals* **1993**, Vol. 14(5), *J. Org. Chem.* **1993**, Vol. 58(9) (collectively, "the Norvez references").

As an initial matter, Applicant respectfully disagrees with the assertion made by the Patent Office that the 2000 Yang reference describes crystal structures of triptycene and pentiptycene secondary diamides having novel chain and channel networks that have demonstrated utility in the formation of new organic materials, including chemical sensors, liquid crystals, and molecular devices. The materials and crystal structures described in the 2000 Yang reference have not been shown to be used as chemical sensors, liquid crystals, and molecular devices. Rather, the 2000 Yang reference only cites references which describe the use of materials other than the crystal structures of triptycene and pentiptycene secondary diamides in such applications.

Also, the Office Action states that the Yang and Norvez references disclose neither a ladder polymer or oligomer having a backbone that can only be severed by breaking at least two bonds, as described in claim 1, nor a composition comprising a shape persistent molecule containing bridgehead atoms, with molecular structures radiating from the bridgehead atoms in

three directions and extending outwardly therefrom such that each defines a van der Waals contact of furthest point from the bridgehead atoms of no less than 3.5 Å, as described in claim 2. However, the Office Action then states that the Yang references and the Norvez references do disclose specific structures which are included in the broad teachings of the claims.

Applicant is confused by the inconsistency of these statements and request that the Patent Office point out specifically where, in the Yang or Norvez references, each and every limitation of claims 1 or 2 can be found expressly or inherently. Applicant believes the Patent Office will be unable to do so, as neither the Yang and Norvez references teach or suggest the compositions described in claims 1 or 2. Therefore, claims 1 or 2 are patentable over the Yang and Norvez references for at least this reason. Claims 11-14, 16, 23-28, and 30 depend from claim 1, and, therefore, are also not anticipated by the Yang and Norvez references. Claims 3-10, 15, 17-22, and 29 depend from claim 2 and, therefore, are also not anticipated by the Yang and Norvez references.

Of the remaining claims, claim 31 is independent.

While the Office Action does not specifically address the subject matter of claim 31, Applicant believes the Patent Office will not be able to establish a prima facie case of anticipation since neither the Yang or Norvez references, alone or in combination, teach or suggest a composition having a first component which includes a porous, shape persistent polymeric component and a second polymeric component which permeates the pores of the first polymeric component to form an interpenetrating network. Therefore, independent claim 31 is not anticipated by the Yang and Norvez references for at least this reason. Claims 32-34 depend from claim 31 and, therefore, are also not anticipated by the Yang references and the Norvez references.

Regarding the alternative rejections under 35 U.S.C. §103(a), the Patent Office has presented no reasoning as to the required motivation to make any modification of the prior art that would result in compositions or devices as claimed.

Accordingly, withdrawal of the rejection of these claims is respectfully requested.

Rejection of Claims 35 and 37-47 under 35 U.S.C. 103(a)

Claims 35 and 37-47 were rejected under 35 U.S.C. §103(a) as being unpatentable over the 2000 Yang reference.

As stated above, Applicant respectfully disagrees with the statement made by the Patent Office that the 2000 Yang reference discloses materials shown to be used as chemical sensors, liquid crystals, and molecular devices.

Applicant also respectfully disagrees with the assertion made by the Patent Office that it would have been obvious to one of ordinary skill in the art to select components from the Yang and Norvez references to produce a device containing a chromophore that is capable of being moved from a first orientation to a second orientation upon application to the chromophore of a source of external energy, wherein the source of external energy is an electric, magnetic, optical, acoustic, electromagnetic, or mechanical field, as described in claim 35. The Yang references do not describe the use of orientable molecules or polymers, while the Norvez references disclose a set of molecules that are orientable via only thermal action. Furthermore, the materials in the 2000 Yang reference are not shown to be capable of being moved from a first orientation to a second orientation upon application of a source of external energy selected from the recited list. Thus, there would be no reasonable expectation of success in combining the materials or crystal structures from the 2000 Yang reference with the teachings of the other Yang and Norvez references to produce the device of claim 35.

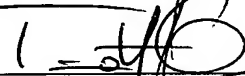
As such, the Applicant sees no motivation or suggestion in the Yang or Norvez references to make any modification to the 2000 Yang reference that would result in the invention as recited in claim 35. Therefore, claim 35 is not obvious over the cited Yang reference and Norvez references for at least this reason. Claims 37-47 depend from claim 35 and, therefore, are also not obvious over the 2000 Yang reference and the Norvez references.

Accordingly, withdrawal of the rejection of these claims is respectfully requested.

In view of the above remarks, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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